

CLAIMS

What is claimed is:

1. An amino acid frame indication system which comprises: input means for inputting a cDNA sequence; translation means for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; alignment means for generating an alignment between said input cDNA sequence and a DNA or amino acid sequence in a database to determine from the alignment an amino acid sequence translated from said input cDNA sequence on the basis of similarity information; and display means for displaying as a segment a region of the amino acid sequence determined by said alignment means on said 3 amino acid frames.
2. The amino acid frame indication system according to claim 1, wherein said alignment means determines an amino acid sequence from an alignment between the amino acid sequence obtained by translating said input cDNA sequence by said translation means in 3 or 6 types of reading frames and an amino acid sequence in a database.
3. The amino acid frame indication system according to claim 1, wherein said alignment means determines an amino acid sequence, taking into consideration a codon gap in said input cDNA sequence.
4. The amino acid frame indication system according to claim 1, wherein said alignment means determines an amino acid sequence from an alignment between amino acid sequences translated from said input cDNA sequence and a DNA sequence in a database, while taking into consideration a codon gap between each of these DNA sequences.

5. The amino acid frame indication system according to claim 1, wherein said display means displays, as a segment, said generated alignment together with said three amino acid frames.

6. The amino acid frame indication system according to claim 5, wherein said display means displays an insertion or deletion position in a DNA sequence in said alignment displayed as a segment.

7. The amino acid frame indication system according to claim 5, wherein said display means displays, as a color, the local consistency of an alignment in said alignment displayed as a segment.

8. The amino acid frame indication system according to claim 1, wherein said display means displays, as text, an alignment between said generated cDNA sequence and a DNA or amino acid sequence in a database, together with said three amino acid frames.

9. An amino acid frame indication system which comprises: input means for inputting a cDNA sequence; translation means for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; codon prediction means for predicting each of initiation and termination codons in said 3 amino acid frames; and display means for displaying an amount or symbol expressing the plausibility of an initiation codon at the initiation codon position as well as displaying the positions of said initiation and termination codons on said 3 amino acid frames.

10. An amino acid frame indication system which comprises: input means for inputting a cDNA sequence; translation means for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; codon prediction means for predicting each of initiation and termination codons in said 3

amino acid frames; coding potential calculation means for calculating coding potential showing coding region plausibility in each of said 3 amino acid frames; and display means for displaying the coding potential of said 3 amino acid frames on each frame or in another window, as well as displaying the positions of said initiation and termination codons on said 3 amino acid frames.

11. The amino acid frame indication system according to claim 1 which comprises an editing means for editing said input cDNA sequence and resetting the edited cDNA sequence to said input cDNA sequence.

12. The amino acid frame indication system according to claim 11, wherein said editing means can perform editing while displaying the text of an alignment.

13. A method for amino acid frame indication which comprises: an input step for inputting a cDNA sequence; a translation step for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; an alignment step for generating an alignment between said input cDNA sequence and a DNA or amino acid sequence in a database to determine from the alignment an amino acid sequence translated from said input cDNA sequence on the basis of similarity information; and a display step for displaying as a segment a region of the amino acid sequence determined by said alignment step on said 3 amino acid frames.

14. A method for amino acid frame indication which comprises: an input step for inputting a cDNA sequence; a translation step for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; a codon prediction step for predicting each of initiation and termination codons in said 3 amino acid frames; and a display step for displaying an amount or symbol expressing the plausibility of an initiation codon at the initiation codon position as well as displaying the positions of said initiation and termination codons on said 3 amino acid frames.

15. A method for amino acid frame indication which comprises: an input step for inputting a cDNA sequence; a translation step for obtaining 3 amino acid frames translated by shifting one letter per frame along said input cDNA sequence; a codon prediction step for predicting each of initiation and termination codons in said 3 amino acid frames; a coding potential calculation step for calculating coding potentials showing coding region plausibility in each of said 3 amino acid frames; and a display step for displaying the coding potential of said 3 amino acid frames on each frame or in another window, as well as displaying the positions of said initiation and termination codons on said 3 amino acid frames.

09540664-082901